

CIRCULATED BEFORE MEETING - AGENDA ITEM 6

Briefing note to Economic and City Development overview and Scrutiny Committee

5 April 2011

Preliminary Flood Risk Assessment – update on progress

This briefing note should be read in conjunction with the committee report, agenda item 6.

Analysis has been carried out of past flooding and predicted future flooding and conclusions formed on surface water flood risk in the York area. This is presented below in the format required for the PFRA report to the Environment Agency.

1 PAST FLOODING

1.1 Surface water flooding

The Council has limited records of past surface water flooding but there is no evidence of significant flooding. The most comprehensive records relate to the consequences of intense rainfall in June 2007 when areas in Haxby, Wigginton, Rufforth, Strensall, Clifton, Rawcliffe, Acomb and Holgate were affected by very localised rainfall events ranging from 1 in 7 to 1 in 100 year return period. These records show that 138 locations reported flood related problems, of which 7 were believed to be habitable properties suffering from internal flooding. The flooding mostly affected roads where the rainfall exceeded the drainage infrastructure design capacity of 1 in 30 years. These records correlated well with those of Yorkshire Water Services. There are no other records available from other sources.

1.2 Groundwater flooding

The British Geological Survey maps show the bedrock in the area to consist of the Sherwood Sandstone group, a thick soft sandstone of Triassic age that forms the centre of the Vale of York. This is always classified as a Major Aquifer. Superficial deposits overlaying the sandstone consist predominantly of sands and gravels, with some clay and till. Bands of alluvium deposits intersect the City of York along the path of the River Ouse and River Foss.

The drift deposits overlying the Sherwood Sandstone are classified as a Minor Aquifer, where the drift is relatively permeable, and a Non-Aquifer, where the drift deposits are fairly thick and have low permeability.

The term groundwater is often misused locally to describe the poor drainage qualities of land underlain by clay, which is a problem in many areas. Groundwater flooding occurs as a result of water rising up from the underlying aquifer or from water flowing from abnormal springs and tends to occur after long periods of sustained high rainfall. Areas at most risk are often low-lying where the water table is more likely to be at shallow depth.

The Council has no record of areas where groundwater emergence is known to be a cause of flooding.

2.5 Locally Agreed Surface Water Information

A definition of 'locally agreed surface water information' has been considered in conjunction with the Environment Agency, Internal Drainage Boards and Yorkshire Water Services to agree what surface water information best represents local conditions.

As there is no local information on future flooding available, the 'locally agreed surface water information' is the Flood Map for Surface Water dataset, which gives an overview of the future flood risk from surface water across York and is considered to be the most appropriate source of information.

2.6 Potential Consequences of Future Flooding

The Environment Agency has used the Flood Map for Surface Water mapping and the National Receptors Database to identify areas across the country that exceed a given threshold. This assessment was carried out based on 1km² national grid squares, and the grid squares that exceed the following criteria were identified:

'Significant harmful consequences' defined as greater than.....	Description
200 people	Flooded to a depth of 0.3m during a rainfall event with a 1 in 200 chance of occurring (or 0.5%)
1 critical service	
20 non residential properties	

Only six grid squares have been identified in York where flood risk is considered to exceed this, four adjoining in the City centre, one in the Boroughbridge Road/Ouse Acres area and one at New Earswick. None of these significantly exceed any of the thresholds, nor are there any concentrations of properties within the squares.

3 INITIAL CONCLUSION

- 3.1 On the basis of the information available, and the criteria set by Defra, the PFRA has established that York is not at risk of significant flooding from surface water and groundwater, as defined in the PFRA guidance.

4 FURTHER WORK

- 4.1 Work will continue in consultation with relevant Council officers to determine whether the national thresholds are acceptable as definitions of local significance in terms of residential properties, businesses, critical services, environmental and cultural heritage and transport infrastructure. Bearing in mind that this is a high level summary of significant flood risk it is not anticipated that this will change the initial conclusion of the report.
- 4.2 The report will also contain nationally agreed wording regarding the effects of climate change.

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